Claims

What is claimed is:

1. A device for slicing a spike signal, the device comprising:

a peak hold circuit for receiving the spike signal and for holding positive peak voltages of the spike signal to generate a first output signal;

a low-pass filter electrically connected to the peak hold circuit, the low pass filter for receiving the first output signal and for filtering the first output signal to generate a slice level signal;

a bias circuit for providing a voltage to raise voltage level of a signal inputted into the bias circuit; and

a comparator electrically connected to the low-pass filter, the comparator for comparing the spike signal with the slice level signal to slice the spike signal.

2. The device of claim 1 wherein the bias circuit is electrically connected prior to the peak hold circuit, electrically connected between the peak hold circuit and the low-pass filter for raising voltage level of the first output signal, or electrically connected between the low-pass filter and the comparator for raising voltage level of the slice level signal.

3. The device of claim 1 further comprising :

a limiter electrically connected prior to the peak hold circuit, the limiter for receiving the spike signal and for outputting a limited spike signal to the peak hold circuit.

4. The device of claim 3 wherein the limited spike signal has a voltage range with an upper limit less than the maximum voltage of the spike signal.

5. The device of claim 3 wherein the bias circuit is electrically connected prior to the limiter, electrically connected between the limiter and the peak hold circuit, electrically connected between the peak hold circuit and the low-pass filter, or electrically connected between the low-pass filter and the comparator.

6. The device of claim 1 further comprising:

a bottom hold circuit electrically connected between the peak hold circuit and the low-pass filter, the bottom hold circuit for holding negative peak voltages of the first output signal to prevent the impact of the spike signal on the slice level signal.

7. The device of claim 6 wherein the bias circuit is electrically connected prior to the peak hold circuit, electrically connected between the peak hold circuit and the bottom hold circuit, or electrically connected between the low-pass filter and the comparator.

8. A device for slicing a spike signal, the device comprising:

a limiter for receiving the spike signal and for limiting the spike signal within a voltage range to generate a first output signal;

a peak hold circuit electrically connected to the limiter for receiving the first output signal and for holding the positive peak voltages of the first output signal to generate a second output signal;

a low-pass filter electrically connected to the peak hold circuit for receiving the second output signal and for filtering the first output signal to generate a slice level signal;

a bias circuit for raising a voltage level of a signal inputted into the bias circuit; and

a comparator electrically connected to the low-pass filter, the comparator for comparing the spike signal with the slice level signal to slice the spike signal.

9. The device of claim 8 wherein the voltage range with an upper limit less than the maximum voltage of the spike signal.

10. The device of claim 8 wherein the bias circuit is electrically connected prior to the limiter, electrically connected between the limiter and the peak hold circuit, electrically connected between the peak hold circuit and the low-pass filter, or electrically connected between the low-pass filter and the comparator.

11. A device for slicing a spike signal, the device comprising:

a peak hold circuit for receiving the spike signal and for holding the positive peak voltages of the spike signal to generate a first output signal;

a bottom hold circuit electrically connected to the peak hold circuit, the bottom hold circuit for holding the negative peak voltages of the first output signal to generate a second output signal;

a bias circuit for raising a voltage level of a signal inputted the bias circuit; and

a comparator electrically connected to the bottom hold circuit, the comparator for comparing the spike signal with a slice level signal to slice the spike signal.

12. The device of claim 11 wherein the second output signal is the slice level signal.

13. The device of claim 12 wherein the bias circuit is electrically connected prior to the peak hold circuit, electrically connected between the peak hold circuit and the bottom hold circuit, or electrically connected between the bottom hold circuit

and the comparator.

14. The device of claim 11 further comprising:
a low-pass filter electrically connected between the bottom hold circuit and the comparator, the low-pass filter for filtering the second output signal to generate a third output signal.

15. The device of claim 14 wherein the bias circuit is electrically connected prior to the peak hold circuit, electrically connected between the peak hold circuit and the bottom hold circuit, electrically connected between the bottom hold circuit and the low-pass filter, or electrically connected between the low-pass filter and the comparator.

16. A method for slicing a spike signal, the method comprising:

holding the positive peak voltages of the spike signal for generating a first output signal; and

comparing the spike signal with a slice level signal for slicing spike signal.

17. The method of claim 16 further comprising:
holding the negative peak voltages of the first output signal;
wherein the slice level signal is the first output signal after its negative peak voltage is held and its voltage level is raised.

18. The method of claim 16 further comprising:
low-pass filtering the first output signal for generating a second output signal.

19. The method of claim 18 further comprising raising a voltage level of the spike signal, the first output signal, or the second output signal, wherein the step of raising a voltage level occurs prior to the step of comparing the spike signal with the slice level signal;

wherein the slice level signal is the second output signal after its voltage level is raised.

20. The method of claim 16 being applied to a slicer of an optical disc system wherein the optical disc system is a DVD-R optical disc drive or a DVD-RW optical disc drive.